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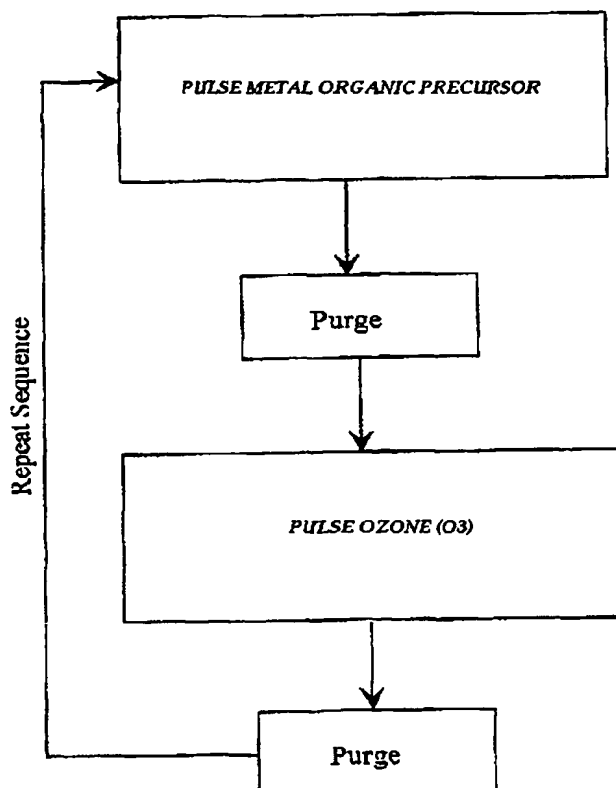
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(54) Title: **ATOMIC LAYER DEPOSITION OF HIGH K METAL OXIDES**



(57) Abstract: The present invention relates to the atomic layer deposition ("ALD") of high k dielectric layers of metal oxides containing Group 4 metals, including hafnium oxide, zirconium oxide, and titanium oxide. More particularly, the present invention relates to the ALD formation of Group 4 metal oxide films using an metal alkyl amide as a metal organic precursor and ozone as a co-reactant.

WO 2004/017377 A3



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/25738

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 21/31

US CL : 438/785

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 438/785

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
east, dialog hafnium and ozone and high K dielectric

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/0232511 A1 (METZNER et al.) December 18, 2003 (18.12.2003) entire document.	1-12
Y,P	HAUSMAN, "Surface Morphology and Crystallinity control in the atomic layer deposition (ALD) of hafnium and zirconium oxide thin films." Journal of Crystal Growth 249 (March 2003) 251-261. entire document.	1-12

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"&" document member of the same patent family

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